other significant complications. Considerations when treating Grade IV skin GVHD include pain control, sedation options, necessary wound care products, and support of the patient, family, and staff.

In the past, the approach to the care of these patients was inconsistent and the necessary dressing changes often performed at the bedside. With the presentation of a new patient with stage IV skin GVHD and the recognition of her complicated care, a multidisciplinary team including transplant physicians and nurse practitioners, clinical nurse specialists, transplant nurses, physical therapists and the wound care nurse practitioner, developed and implemented a standard operating procedure (SOP) for the care of children with stage IV GVHD. The SOP outlines the process to be followed and the supplies necessary to treat the skin GVHD. The dressing changes for these patients are now performed under sedation or anesthesia with collaboration among the appropriate clinicians. Providing adequate sedation and pain control for these patients allows for more comprehensive and efficient care.

The new process enables the team to provide other interventions, such as central line care and physical therapy, without causing additional anxiety or pain to the patient. In addition, the SOP includes a self care plan for the team performing the dressing changes, as the care can be mentally and emotionally exhausting. The goal is to provide the safest care to the patient while addressing multiple needs, both clinical and emotional. Two patients with Grade IV skin GVHD have been treated with the new SOP. The collaboration between the numerous disciplines has impacted the success and consistency of this new process.

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OUTPATIENT BMT ELECTRONIC NURSING DOCUMENTATION: ONE STOP CHARTING

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Background: Over the years, Blood and Marrow Transplant (BMT) care has transitioned from the inpatient to the outpatient setting. It is key to continuity of care that nursing documentation is specific, comprehensive, and pertinent to the unique care that is delivered in the outpatient setting.

At our NCI-designated cancer center, our outpatient BMT Treatment Center (BMT TC) provides care to an average of 65 patients (range 30-120) per day at all stages of the BMT process. During a process improvement project, there was difficulty in retrieving data regarding nursing care in the BMT TC. Discussion with team members revealed further deficits. The documentation forms were not BMT-specific and there were multiple areas to chart. Existing forms served to chart nursing tasks but did not highlight nursing assessment and coordination of care or reflect the patient's BMT status. It was decided to develop one comprehensive, electronic nursing document.

Intervention: An interdisciplinary team of BMT experts met to develop an ideal document that would be BMT-specific, reflect CDC and ONS evidence-based care recommendations, and meet nursing documentation guidelines from the Joint Commission and ONS. The proposed changes were made with support of Nursing Informatics and presented for approval to the Nursing Informatics Council and the BMT Performance Improvement Committee. The final "BMT Treatment Center Nursing Note" is a single comprehensive, electronic nursing form that provides a template for documentation of a BMT patient's status and all aspects of the BMT TC nurse's role and that is easily accessible to all members of the BMT interdisciplinary team.

Outcome: Implementation of the new electronic form is pending the upload of the template into the Electronic Medical Record. Preliminary use of the paper version of the new form indicated increased ease of documentation and data retrieval, increased compliance with charting standards, and a better understanding of the BMT patient's status. These findings will be confirmed upon implementation of the electronic form. We expect future data to reflect improved charting compliance and improved communication due to increased accessibility to BMT TC nurse's charting for all disciplines of the BMT Team.

Conclusion: Nursing documentation is pivotal in the BMT population. It has value to all members of the BMT team, thus it is crucial to have comprehensive and user-friendly nursing documentation.

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IMPROVING COMMUNICATION IN THE ADULT HEMATOPOIETIC STEM CELL TRANSPLANT DAY HOSPITAL SETTING: WHAT ARE THE BENEFITS OF UTILIZING AN ELECTRONIC KARDEX?

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Care of the hematopoietic stem cell transplant (HSCT) patient takes place in multiple settings. A less traditional "day hospital" that allows patients to stay in local housing instead of the hospital provides a unique environment at our institution. Maintaining effective communication in the HSCT day hospital is a daily challenge. In our traditional inpatient setting it is common practice for nurses to sit together at the change of shift and give or receive a formal report on their patient including current issues and significant past medical history. With the high numbers of patients that are seen, between daily patients and return patients, receiving a formal report of pertinent patient information is difficult and essentially nonexistent in the day hospital. This scenario sets nursing staff up for errors and compromises patient safety as there is no opportunity for clinic nurses to sit together to communicate essential patient information.

In an attempt to improve communication between nursing staff, an electronic kardex was developed for the HSCT day hospital. The focus is to create a highly accessible communication tool that is user friendly and easy to update on a daily basis. The kardex was designed with input from staff and is directly linked to the patient program database.

Using this kardex as a communication tool in the day hospital will likely decrease nursing errors, improve the quality of patient care and, increase efficiency in the day hospital. A survey for staff was developed to evaluate effectiveness and staff satisfaction of the electronic kardex.

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IMPROVING SAFETY BY STANDARDIZING ADULT BONE MARROW TRANSPLANT TELEPHONE TRIAGE

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Telephone triage occurs in multiple settings either in the emergency room department or the clinical setting. With Adult Bone Marrow Transplant transitioning more and more to the outpatient setting, well-trained triage nurses are crucial. Due to the complexity of adult bone marrow transplant patients, standardization of triage is the best way to ensure their safety. We are developing and enhancing existing guidelines for triage to accommodate bone marrow transplant patients. This resource will guide charge nurses in the decision making process for whether or not bone marrow clinic patients should be treated inpatient, continue to their clinic appointment the next day, or be emergently admitted through the emergency department. A pre-survey of charge nurses was utilized to determine the most difficult patient issues to triage as well as auditing the most common types of after hour clinic calls. A post-survey will determine the impact on improvement in patient safety and on any issues identified in the pre-survey.

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ESSENTIAL EDUCATIONAL ELEMENTS TO ENHANCE HCT PATIENT CENTERED CARE: A 3-PRONGED EDUCATIONAL APPROACH

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Purpose: To discuss the recreation of a formalized house wide comprehensive educational plan for a Hematopoietic Cell Transplantation Program.The restructuring consisted of education changes for caregivers and patients, and nurse education.

Background: Patients undergoing life-altering events require continual information and support. A great need for a more structured education program for patients and families undergoing stem cell transplantation was identified. Prior to this intervention, patients

were given one-on-one education by the transplant coordinator and received a binder with information on the transplant process. The patient was then provided with education throughout their stay by their bedside nurses and other disciplines. No standardized program existed. Concurrently, the stem cell patient population had grown creating a need to provide house-wide education to ensure all nurses had a basic understanding of transplant to properly care for this specific patient population.

Methods: The formalized educational program consisted of the following: 1) a New Patient Class taught by nurse coordinators designed for transplant patients and caregivers, 2) multidisciplinary redesign of the educational content of the Transplant Binder for patients and caregivers, 3) a required learning tool for all RNs consisting of 4 hours of didactic content, specific to HCT patients.

Results: Our patient and caregiver class has been active for a month and although turnout has been sporadic, plans are being created to incorporate this into the transplant process. An evaluation tool is being developed and feedback will be monitored. The educational binder is in the printing phase of development and will be released shortly. Our nursing education component was a large success. Over a three month period, 100 percent of inpatient nurses as well as outpatient staff in key clinic areas completed the modules and passed the test with an 80% or higher.

Discussion: The restructuring of the transplant education has been an arduous process encompassing a multidiscipline approach and spanning over a year in time. Post class evaluations for the patient and caregiver education are received on an on-going basis. Education for the nursing staff has created a foundation which has spurred non transplant nurses to pursue the ONS HCT class as well as desire more education on the transplant process.

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STARTING AN ALLOGENEIC TRANSPLANT PROGRAM: NURSING EDUCATION

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Background: Our NCI-designated Cancer Center launched an allogeneic transplant program in January 2011, in addition to the existing FACT-accredited autologous bone marrow transplant (BMT) program, in existence since 1987. The program's success requires a quality education program to empower nursing staff in providing high level nursing care for patients receiving a related or unrelated donor transplant source.

Purpose: To create a comprehensive educational program for nurses to competently care for allogeneic BMT patients, a collaborative effort among clinicians and administrators was conceived. Essential components of the education material for the needs of both inpatient and outpatient nurses were defined by the Nurse Educator, Clinical Nurse Specialist, the Allogeneic Transplant Nurse Coordinator and the Medical Director of the transplant program. Additionally, the criteria for and the appropriate documentation of nurse competence was determined.

Outcomes: For the primary training sessions, a core group of 12 inpatient nurses were identified as having BMT experience, whether it was from an outside transplant facility or with the existing autologous program. This core BMT nurse group attended the first class on allogeneic BMT that was designed to augment their existing knowledge and expand critical thinking of transplant complexities. Following this core group, nurses who had very limited or no prior education in BMT would need to be educated on transplant basics. For these nurses, the Oncology Nursing Society's Fundamentals of Blood and Marrow Transplant nineteen hour online course was used in conjunction with an eight hour on-site class. Completion of the ONS class included passing the online post-test. The nurses were then given patient care orientation days. These nurses would complete the required education in groups of ten to twelve at a time to limit impact on staffing. Additionally, staff in-services were provided in fifteen to thirty minute increments based on patient care needs and nursing needs identified as the program moved forward.

A total of forty nine nurses were educated in 2011 in Bone Marrow Transplant, including several non-nursing staff.

Table. Total Staff Educated 2011

Type of Staff	Number Educated
Charge Nurses	5
Inpatient	27
Outpatient	9
Managerial	4
Other Disciplines (hospital class only)	4
Total	49

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A "ROAD MAP" TO CREATE A STANDARDIZED, DEFECT FREE HEMATOPOIETIC CELL TRANSPLANT (HCT) SCHEDULE UTILIZING LEAN METHODOLOGY – A3 THINKING

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Background: The HCT schedule or "roadmap" is created by transplant coordinators to summarize the treatment plan for patients undergoing HCT. 42 templates of HCT schedules exist, content varies based on the type of transplant (allo, auto, URD). Historically, the HCT schedule was created in an Excel template, reviewed and signed by a physician, and distributed to over 209 City of Hope (COH) employees. The document is frequently referred to by clinicians and others, as it contains key information and serves as trigger for many processes during the HCT. The document also serves a purpose in regulatory & financial process review and clinical trial activities. Because the information on the HCT schedule is transcribed, transcription errors pose a significant patient safety risk.

Purpose: To create a schedule that provides the clinicians one source of truth, in real time, in a standard format, and with standard data elements. The schedule will be available to only those who need it at City of Hope. The schedule will be aligned with current and future Computer Information System (CIS) upgrades, as well as adherence to all regulatory and reporting requirements.

Intervention: "The focus of LEAN methododology is to maximize customer value while minimizing waste." Lead by a sensei, a team of key stakeholders were organized to participate in a 4-day Rapid Improvement Event (RIE) using A3 thinking. The team was challenged to identify the reason for action, describe the current & future state, conduct gap analysis, find solution approach, perform rapid experiments, and to develop completion plan & continuous monitoring of the improvements.

Evaluation: At the end of the RIE, a webased sharepoint site was designed, standard work for producing the transplant schedule were created, email distribution of the schedule was eliminated & distribution list reduced to 87 individuals, number of templates reduced to 7, schedule now accessed in COH electronic medical record and critical elements for future auditing defined. We continue to monitor these improvements at 30, 60 & 90 day intervals to ensure sustainment.

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EFFECTIVE HANDOVER REPORT, A TOOL FOR IMPROVED NURSING OUTCOMES

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Background: Patient safety is at the forefront of every nurse's daily routine, but communication errors during shift report can compromise that safety which can result in devastating outcomes. Patient safety and communication are key components in The Joint Commission National Patient Safety Goals. Errors in communication can contribute to gaps in care, increased financial costs, decreased patient satisfaction and decreased productivity.